

When Cookies are Tossed

Tools for successfully managing motion sickness

story by Master Sgt. Scott Wagers
photo by Staff Sgt. Sean White

It's mind over stomach

- Do not watch or talk to another traveler who is experiencing motion sickness. It's eerily contagious.
- Anxiety from fear of flying or previous bouts of motion sickness can heighten your chances of becoming sick again. To relax, practice diaphragmatic breathing. With your mouth closed, inhale slowly through your nose (expanding your abdomen — not your chest), then slowly exhale through your mouth (this helps to prevent air swallowing and hyperventilation and seeks to stimulate the vagus nerve to pass gastric contents "downstream"). Continue at a slow comfortable pace until motion sickness symptoms are under control. Resume normal breathing.
- Being mentally fatigued from insufficient sleep can lower your tolerance to G's, heat and psychological stress. Six to eight hours of peaceful sleep prior to travel is recommended.

How excited would you be about your job knowing that every day you show up for work, there is a very good chance you'll lose your lunch? That you'll become so physically ill, that your stomach will upchuck everything you've eaten since you were in the 1st grade.

For nearly four years, Staff Sgt. Sean White has lived with that reality. Despite this, he quickly describes his job as "the opportunity of a lifetime."

The location of Sergeant White's work center is part of the problem. When it's not physically moving in well-choreographed loops through the lower atmosphere, you'll find his red, white and blue painted office parked on the flightline at Nellis Air Force Base, Nev.

Sergeant White is not an enlisted pilot. He is one of two aerial-qualified still photographers in the U.S. Air

Force's Aerial Demonstration Squadron — better known as the Thunderbirds.

But it's not the physical act of flying that causes the occasional malaise to the 12-year veteran with nearly 150 flying hours in the F-16 Fighting Falcon. It's what he does while he's flying that can turn his stomach inside out.

"It doesn't happen all the time and it's specifically related to looking through the camera during the aggressive parts of the flight," explained Sergeant White.

He further describes a four-ship configuration called the "Diamond Roll" where spacing between wing tips is a mere 19 inches apart and skillfully maintained throughout the entire spiraling maneuver.

"When I'm framing up the plane next to me, it looks as though we're sitting completely still. But my inner ear — feeling an average of four to

five G's or higher, depending upon which position we fly — definitely knows I'm moving." And that's where it can get ugly.

With a camera in one hand, and a freezer bag in the other, Sergeant White is sometimes overwhelmed with an onset of extreme nausea, cold sweats and ultimately the uncontrollable need to throw up.

"It's called sensory conflict," said 1st Lt. Eydin Hansen, an aerospace physiologist assigned to the 75th Aeromedical Squadron at Hill Air Force Base, Utah, "and it's the number one culprit of airsickness."

Human bodies have three balance systems. The vestibular sensory system, located in the inner ear, senses head movement through space by detecting either rotational or linear movement. Ocular (visual) sensors, meanwhile, provide the brain with a three-dimensional validation of location and movement. And last, the proprioceptive system (often called intuition or the sixth sense) uses special pressure sensors in muscles, tendons and joints to sense gravity and joint position.

"The problem occurs," said Lieutenant Hansen, "when one or more of these systems produce conflicting information. In Sergeant White's case, his vestibular sense conflicts with the visual sense, which creates an abnormal physiological state. This results in motion sickness."

Potentially afflicting all who travel by land, sea or air, many have succumbed to its wrath. In its passive state, symptoms are drowsiness, sweating, nausea, pallor and headaches. In its active state, you get the bonus symptom of actual vomiting, which can range anywhere from "slight spillage" to a "fire hose projectile spew."

As powerless as this notoriously unpleasant phenomenon makes us feel, there are definite ways to combat it.

In the early 1980s, the Air Force began the Air Sickness Management program to assist more than half of the student pilots who statistically encounter airsickness to some degree in their training. The program, shaped by flight surgeons, psychologists and aerospace physiologists, has evolved

into a five-phase program aimed at early detection and treatment.

In the early phases, student pilots are educated on diet, hydration and relaxation techniques under the watchful supervision of a flight surgeon. If this proves unsuccessful, later phases can involve everything from temporary prescriptions

of medication, biofeedback testing and even riding a mechanical device known as the Barany Chair. Used as a spinning platform to simulate movement encountered in flight, the chair tests a student's ability to perform standard in-flight tasks of varying complexity while learning to overcome sensory conflict.

By eliminating physical and psychological barriers that impede pilot training, the goal of the management program is to maximize the rate of learning and ultimately increase pilot retainability.

For those who don't have access to an aerospace physiologist and a structured five-phase course — like the Airman of the quarter rewarded with her first F-15 incentive ride or the family going whale watching off the coast of California — the options are many. And they're all better than hugging a cold porcelain commode.

Lieutenant Hansen attributes 60 percent of one's success in preventing motion sickness to diet alone (see sidebar). He also prescribes exercises in learning to control visual cues, getting proper rest and using diaphragmatic breathing to relax one of the most powerful tools you have in fighting motion sickness: your mind. When not in control of this mental resource, you leave yourself vulnerable to stress and anxiety — something that Sergeant White is admittedly familiar with.

"I create a lot of stress on myself,"

What you see is what you feel

■ When in transit, always ride where your eyes can see the same motion that your body and inner ears feel.

▲ In an aircraft, choose a seat that enables you to look outside. Also, motion is minimized in seats centrally located in the fuselage — over the wings of a plane or directly under the rotor in a helicopter.

▲ In a car, sit in the front seat and look at the distant scenery.

▲ On a boat, go up on deck where you can focus on the horizon.

■ Do not read while traveling, and do not sit in a seat facing backward.

■ Avoid rapid head movements. With in-flight turns, first move your eyes in the direction the aircraft is turning — then follow with your head.

he said. "My worst fear is returning from an aerial photo sortie and having to tell the boss that the taxpayers paid to put seven jets in the air, and I failed to get the shot."

So far, with three and a half years on the team, he's proud to report that has never happened. In fact, where other photographers would've thrown in the towel after such recurring bouts of airsickness, Sergeant White single-handedly fills a two-man slot on the team and is credited with capturing every promotional Thunderbird photograph taken during the 2004 season.

"I definitely shoot with both eyes open now," he said reporting a tip he's learned about trying to control sensory conflicts. With his poster-sized images canvassing the walls of countless Thunderbird fans around the world, Sergeant White said he wouldn't trade his experiences — or any lost lunches — for anything. 🦅

You wear what you eat

■ Avoid greasy, fatty foods, acids (orange, tomato, grapefruit), caffeinated and carbonated drinks (coffee, tea, sodas), high protein foods like preserved meats, milk and cheese, and high sodium snacks like potato chips and pretzels.

■ Eat all meals, have adequate carbohydrates (all grains and starches are good) 90 to 120 minutes before flying, stay well hydrated with juice, water or a 50/50 diluted mixture of water and Gatorade/sports drink.

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